

Drug Interactions in Infectious Diseases

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Infectious Disease

Drug Interactions in Infectious Diseases

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Foreword

The potential to improve health has increased extraordinarily over the past decade for health-care practitioners fortunate enough to practice in a system with adequate resources. The potential to prevent and treat disease has also expanded dramatically owing to the discovery and development of new therapeutic modalities by a cooperative, synergistic effort among academic centers, governmental agencies, and the pharmaceutical industry.

Progress in the field of infectious disease is a striking example of the strides that the health sciences have made. Over the past two decades, the causative organisms have been identified for previously enigmatic diseases such as acquired immunodeficiency syndrome (human immunodeficiency virus), certain forms of T-cell leukemia (human lymphotropic virus-I), Kaposi's sarcoma (human herpes virus-I), non-A, non-B hepatitis (hepatitis C virus), cat-scratch disease (*Rochalimaea*), Lyme disease (*Borrelia burgdorferi*), and many forms of diarrhea (cryptosporidia, microsporidia, cyclospora), among others. The pathogenesis of many disorders has become better understood as our knowledge of immune mechanisms, including cytokine interactions, has expanded.

Many new classes of therapeutic entities to treat infectious diseases have been developed over the past decade. Health-care practitioners who left training before 1990, for example, did not have experience in the use of protease inhibitors, liposomal antifungal agents, the newer generation of quinolones, interferons, colony stimulating factors, or interleukins.

Pharmacotherapy is becoming complicated not only because of the many new drugs, but also because patients with complex diseases are being treated with multidrug regimens. More and more patients may receive multiple drug regimens superimposed for preventive or therapeutic indications, and they receive these regimens on a background of therapies for other acute or chronic diseases such as congestive heart failure, hypertension, diabetes, lipid disorders, cancer, vasculitis, or organ transplantation. Complex therapeutic regimens thus provide a potential for drug interactions that can have clinically important consequences.

Drug interactions can be harmful, or even fatal, such as the interactions between cisapride or terfenadine and ritonavir, which have produced fatal arrhythmias. Interactions can also, in contrast, be beneficial; the interaction of ritonavir and saquinavir permits a regimen that is more potent and more tolerable in terms of pill burden than either agent alone. Thus, understanding the mechanisms of pharmacokinetic and pharmacodynamic interactions is essential for health care practitioners. Also essential

is access to specific information about the interactions of drugs being considered for use by the practitioner.

Drug Interactions in Infectious Disease provides both a conceptual approach and specific information about drug interactions and should constitute a useful reference for the entire health care team responsible for patient management: nurses, physician-assistants, pharmacists, and physicians. For health care providers to produce desired outcomes for their patients, the approach and specific information available in this volume will prove a most valuable resource.

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Preface

The increasing number and complexity of drug interactions in the treatment of infectious diseases can be overwhelming. *Drug Interactions in Infectious Diseases* is designed to be a comprehensive text that provides a thorough understanding of drug interactions as they relate to anti-infective agents. The authors have reviewed the mechanisms of drug–drug and drug–food interactions, examined the clinical significance and consequences of such interactions, and discussed practical clinical approaches to the management of these interactions. Each chapter has extensive tables that we believe will be useful to the reader as a rapid reference.

The editors believe that the diversity of *Drug Interactions in Infectious Diseases* ensures its service as a valuable resource to the clinician, educator, and researcher. Clinicians will find the material on management strategies to be of great value in their daily clinical practices. The educator seeking an in-depth understanding of mechanisms and in vivo/in vitro correlations will find a complete overview of these important topics involving drug interactions. And, researchers from academia, industry, and government are provided an excellent chapter on study design and data analysis for drug interaction studies. Finally, all professionals will find that the chapters on individual drug classes constitute a comprehensive, critical examination of the published literature.

The editors would like to express their appreciation to the authors for their outstanding contributions to *Drug Interactions in Infectious Diseases*. In addition, we would like to thank our families for their continued encouragement and support during its preparation.

Stephen C. Piscitelli, PHARM.D.
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Contents

<i>Foreword, Henry Masur, M.D.</i>	<i>v</i>
<i>Preface</i>	<i>vii</i>
<i>Contributors</i>	<i>xi</i>
1 Introduction to Drug Interactions	1
<i>Yasmin Khaliq, Keith Gallicano, and Jan Sahai</i>	
2 Mechanisms of Drug Interactions	13
<i>Angela D. M. Kashuba and Joseph S. Bertino, Jr.</i>	
3 Drug Interactions with Antiretrovirals for HIV Infection	39
<i>Stephen C. Piscitelli and Kimberly A. Struble</i>	
4 AIDS/HIV: Drugs for Opportunistic Infections	61
<i>Alice Tseng</i>	
5 Drugs for Tuberculosis	109
<i>Charles A. Peloquin</i>	
6 Quinolones	121
<i>David R. P. Guay</i>	
7 Beta-Lactam Antibiotics	151
<i>Melinda M. Neuhauser and Larry H. Danziger</i>	
8 Antifungal Agents	185
<i>Paul O. Gubbins, Scott A. McConnell, and Scott R. Penzak</i>	
9 Miscellaneous Antibiotics	219
<i>Gregory M. Susla</i>	
10 Drug–Food Interactions.....	249
<i>Kevin W. Garey and Keith A. Rodvold</i>	
11 Drug–Cytokine Interactions	287
<i>Curtis E. Haas</i>	
12 Circumventing Drug Interactions	311
<i>Douglas N. Fish</i>	
13 Design and Data Analysis of Drug Interaction Studies	333
<i>David Nix and Keith Gallicano</i>	
Index.....	353

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